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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/717,571  
Filing Date: November 21, 2003  
Appellant(s): SHIGEMURA, KOJI

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Randall S. Svihla  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 8/27/2007 appealing from the Office action mailed 2/27/2007.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

No amendment after final has been filed.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**NEW GROUND(S) OF REJECTION**

The rejection of claims 14-15, 17-18, and 21 under 35 U.S.C. 103(a) as being unpatentable over Tsuchiya et al. (WO 2003/019988) and Ito (U.S. Patent No. 5,652,067).

The rejection of claim 15 under 35 U.S.C. 103(a) as being unpatentable over Tsuchiya et al. (WO 2003/019988), Ito (U.S. Patent No. 5,652,067), and Yamada et al. (U.S. Publication No. 2001/0019807).

The rejection of claims 16 and 22 under 35 U.S.C. 103(a) as being unpatentable over Tsuchiya et al. (WO 2003/019988), Ito (U.S. Patent No. 5,652,067), and Martin (U.S. Patent No. 4,676,193).

The rejection of claim 19 under 35 U.S.C. 103(a) as being unpatentable over Tsuchiya et al. (WO 2003/019988), Ito (U.S. Patent No. 5,652,067), and Kitazume (U.S. Publication No. 2002/0025406).

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

2002/0150674	Utsugi et al.	10-2002
5,652,067	Ito et al.	07-1997
4,676,193	Martin	06-1987
2001/0019807	Yamada et al.	09-2001
2002/0025406	Kitazume	02-2002
2002/0102754	Furjimori et al.	08-2002
WO 03/019988	Tsuchiya et al.	03-2003
2004/0020435	Tsuchiya et al.	02-2004

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

*Claims 14-19 and 21-22 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the*

relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

There is no support in claim 14 for “a flat frame supporting the first flat surface” and “a flat cover mask support the second flat surface” in light of “a first flat surface extending over an entire area of the flat mask, and a second flat surface extending over the entire area of the flat mask”. The first and second flat surfaces refer to the *entire* flat surface of the mask. According to Figs. 3 and 6A-C, the frame and cover mask do not cover the entire flat surface of the mask. For the purpose of this examination, it will be interpreted that the frame and cover mask at least covers parts of the mask.

The specification does not fully support the limitation “wherein the flat frame and the flat cover mask *are the only elements that touch the flat mask*” (claim 22, emphasis added by Examiner). For example, the mask, cover mask, and frame can be joined together using an adhesive agent such as welding [0045]. The adhesive agent necessarily contacts the mask. Therefore, the frame and cover mask are not the only elements that touch the mask because the adhesive agent would come into contact with the mask as well.

*Claims 14-17 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Utsugi et al. (U.S. Publication No. 2002/0150674, hereinafter “Utsugi”) in view of Ito et al. (U.S. Patent No. 5,652,067, hereinafter “Ito”) and Martin (U.S. Patent No. 4,676,193, hereinafter “Martin”).*

Utsugi teaches a method of manufacturing an organic electroluminescent (EL) device, the method comprising:

forming a first electrode layer 11 in a predetermined pattern on an insulating substrate 10 [0038], [0044];

forming an organic film comprising at least a patterned emission layer 13 on the first electrode layer [0049];

forming a second electrode layer 15 in a predetermined pattern on the organic film [0038];

wherein the organic film and the second electrode layer are vapor deposited using a deposition mask frame assembly [0053]-[0054],[0058] comprising:

a mask comprising a thin plate 95 in which a predetermined pattern of apertures is formed (Figs. 2-4).

Utsugi does not explicitly teach sealing the electrode layer. However, Ito teaches that it was extremely well known in the art of manufacturing organic EL devices to apply a sealing layer over the cathode to protect the cathode and the organic materials from harmful effects of air and moisture (col. 19, lines 30-39). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have sealed the second electrode layer in order to have protected the cathode and organic material from harmful effects.

Utsugi teaches vacuum evaporation with a mask, but does not explicitly teach a frame supporting one surface of the mask so that the mask is tensed and a cover mask supporting an opposite surface of the mask. However, Martin discloses a mask assembly that is suitable for vacuum evaporation (column 1, lines 13-21 and column 2, lines 54-59). Fig. 7 shows a mask assembly 32 comprising: a mask 40', a frame 34, and a cover mask 88. The frame and cover mask sandwich the mask. It would have been obvious to one of ordinary skill in the art at the time of invention to have used the mask assembly of Martin in the EL vacuum evaporation of Utsugi. One would have been motivated to do so with the expectation of using a mask assembly that is dimensionally stable at the operating temperatures of vacuum evaporation.

The mask in Fig. 7 of Martin does not have a flat surface extending over an entire area of the mask. In particular, a raised boss member 98 of the cover mask defines a clamping member counterbore 94 (col. 10, lines 47-50) and causes the mask to lie in two separate planes. The raised boss member along with the raised ridge 38 (i.e., the raised part of the frame 34) seems to hold the entire mask assembly together, which would in turn provide the means for affixing the mask. One of ordinary skill in the art would realize that the elimination of the raised boss member and raised ridge would result in the loss of such functions. However, Martin teaches in a different embodiment that welding can be used to join different parts of the mask assembly and that welding can be a means for affixing the mask (col. 8, lines 63-68; col. 10, lines 22-32). In view of this teaching, one of ordinary skill in the art would recognize that the step of welding

would supplement the loss of the function of the raised boss member and the raised ridge. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have omitted the raised boss member and the raised ridge (i.e., such that the mask would have a flat surface extending over an entire area of the mask) and to have welded the mask assembly together after sandwiching the mask 40' of Fig. 7 with a reasonable expectation of success because Martin teaches that welding is an operable method of joining parts of the mask assembly and an operable means for affixing the mask with the desired tension.

Claim 15: Utsugi teaches that a mask can contain nickel [0042].

Claim 16: Martin teaches that the mask can be formed by electro-forming (column 1, lines 28-31).

Claim 17: Martin does not explicitly teach that the mask, frame, and cover mask can be joined together by welding. However, such is obvious as discussed above.

Claim 21: Martin teaches that the mask has substantially uniform tension (abstract). In other words, the tension of the mask may not be completely uniform. Thus, the tension of the mask will necessarily vary at different points.

*Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Utsugi '674 in view of Ito '067 and Martin '193 as applied to claim 14 above, and further in view of Yamada et al. (U.S. Publication No. 2001/0019807, hereinafter "Yamada").*

Utsugi, Ito, and Martin are discussed above, but do not explicitly teach that the mask can be completely formed of nickel or an alloy of nickel and cobalt.

Yamada teaches a method of vapor depositing EL materials with a mask, wherein the mask can be made of a metal such as nickel [0022]. The selection of something based on its known suitability for its intended use has been held to support a prima facie case of obviousness. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have made the vapor deposition mask of Utsugi and Martin out of nickel with a reasonable expectation of success because Yamada teaches that nickel masks are suitable in the art for vapor deposition.

*Claims 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Utsugi '674 in view of Ito '067 and Martin '193 as applied to claim 17 above, and further in view of Kitazume (U.S. Publication No. 2002/0025406, hereinafter "Kitazume").*

Claim 18: Utsugi, Ito, and Martin are discussed above, but do not explicitly teach that the mask, frame, and cover mask are joined by spot welding. However, Kitazume teaches that spot welding is a suitable method for joining the pieces of a shadow mask used for vapor deposition to form organic EL devices [0004], [0010]. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used spot welding as the particular method of joining the mask pieces of Martin with a reasonable expectation of success because spot welding is recognized in the art as a suitable method for joining the pieces of a shadow mask used for vapor deposition to form organic EL devices. The selection of something based on its known suitability for its intended use has been held to support a prima facie case of obviousness. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945).

Claim 19: The welding pitch may be 1 mm [0035].

*Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Utsugi '674 in view of Ito '067 and Martin '193 as applied to claim 14 above, and further in view of Fujimori et al. (U.S. Publication No. 2002/0102754 "Fujimori").*

Utsugi, Ito, and Martin are discussed above, but do not explicitly teach that the frame and cover mask are the only elements that touch the mask. In particular, adjusting means 64 of Martin is mounted and extended through supporting aperture 72 and supplemental supporting aperture 96 (col. 11, lines 1-4). Such adjusting means may come in contact with the mask when extended through the apertures (Fig. 7). The adjusting means seem to include a prealigned registration member 60 and a registration pin 62 (col. 9, lines 30-36; Fig. 1). The registration pin seems to be used for aligning the mask assembly to the gantry assembly, wherein the gantry assembly includes the deposition substrate and wherein the registration pins of the mask are aligned to the registration members 162, 164, 166 of the gantry (col. 18, line 54-col. 19, line 34; Figs. 21-23). In essence, the registration pin is used to provide a proper alignment of the mask to



the substrate. However, Fujimori teaches that alignment marks on the mask and substrate with the use of a camera can be used for to make the proper alignment [0066]. Alignment marks 6 are simple indications on the surface of the frame of the mask assembly and would not require any contact with the mask. Substitution of equivalents requires no express motivation (see MPEP 2144.06). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to used alignment marks as opposed to the registration pins and registration members of Martin to align the mask to the substrate with a reasonable expectation of success because Fujimori teaches that alignment marks is an operable equivalent for aligning the mask to the substrate.

#### **NEW GROUND(S) OF REJECTION**

*Claims 14-15, 17-18, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 2003/019988 to Tsuchiya et al. (references made are to the English equivalent U.S. Publication No. 2004/0020435, hereinafter "Tsuchiya") and Ito '067.*

Appellant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

Tsuchiya teaches a method of forming patterned layers for an organic EL device [0055]. The EL device includes a first electrode layer 2 formed on a glass substrate (i.e., an insulating substrate), an organic film 4 formed on the first electrode, and forming a second electrode 6 on the organic film. (It should be noted that the limitation of "on" does not require physical contact but can be broadly interpreted to include having one layer formed over another layer without physical contact.) A metal mask can be used to form the organic layer and the second electrode via vapor deposition [0002].

The mask of Tsuchiya comprises of a flat mask 13, a flat frame 14, and a flat cover frame 20,25 (Fig. 1).

Tsuchiya does not explicitly teach sealing the second electrode layer. However, Ito teaches that such is obvious for substantially the same reasons as discussed above in the rejection over Utsugi, Martin, and Ito.

Claim 15: Tsuchiya teaches that the mask can be formed of nickel alloy [0057].

Claim 17: Figs. 7-9 are used in interpretation for this claim. Fig. 7 includes a flat mask 113, a flat frame 112, and a flat cover mask 114. The mask is welded to the frame at welding points 136 and the cover mask is welded to the frame at welding points 125, 128 (Fig. 8; [0080]-[0081]). Thus, the flat mask, the flat frame, and the flat cover mask are held together by welds.

Claim 18: Tsuchiya teaches that the welds are spot welds (i.e., dot welds) (Fig. 8; [0080]-[0081]).

Claim 21: Tsuchiya teaches that the mask 13 can be "highly uniformly tensioned". In other words, the tension of the mask may not be completely uniform. Thus, the tension of the mask will necessarily vary at different points.

*Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over to Tsuchiya '988 and Ito '067 as applied to claim 14 above, and further in view of Yamada '807.*

Tsuchiya and Ito are discussed above. Tsuchiya does not explicitly teach that the mask can be completely formed of nickel or an alloy of nickel and cobalt.

Yamada teaches a method of vapor depositing EL materials with a mask, wherein the mask can be made of a metal such as nickel [0022]. The selection of something based on its known suitability for its intended use has been held to support a prima facie case of obviousness. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have made the vapor deposition mask of Tsuchiya out of nickel with a reasonable expectation of success because Yamada teaches that nickel masks are suitable in the art of vapor deposition.

*Claims 16 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over to Tsuchiya '988 and Ito '067 as applied to claim 14 above, and further in view of Martin '193.*

Claim 16: Tsuchiya and Ito are discussed above. Tsuchiya does not explicitly teach that the mask is an electro-formed mask. However, Martin teaches that it is well known in the art of vapor deposition masks to form a mask via electro-forming (column 1, lines 28-31). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have

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formed the mask of Tsuchiya via electro-forming with a reasonable expectation of success because Martin teaches that such methods are operable in the art for forming a mask.

Claim 22: Tsuchiya does not explicitly teach that the flat frame and the flat cover mask are the only elements that touch the flat mask in Fig. 8 (see the interpretation of claim 17). In particular, a welding material used in the spot welding and the bolts of the substrate clamp 140 can each contact the flat mask.

As for the welding material contacting the mask, Martin teaches that it is well known use laser welding in the art of forming a vapor deposition mask to provide an affixation means of the mask (col. 8, line 63-col. 9, line 2). Laser welding does not use a welding material that would contact the mask. It would have been obvious to one of ordinary skill in the art at the time of invention to have attached the mask, frame, and cover frame of Fig. 8 of Tsuchiya using laser welding techniques, as opposed to spot welding, with a reasonable expectation of success because teachings of Tsuchiya and Martin would have presented a recognition of equivalency in the prior art and would have presented strong evidence of obviousness in substituting one method for the other in the art of affixing a vapor deposition mask.

As for the bolts of the substrate clamp contacting the mask, Tsuchiya teaches that the substrate clamp functions to press a substrate against the frame in order to hold the substrate fixedly on the frame [0062]. However, Tsuchiya also teaches that the mask and substrate can be held together by the magnetic attraction of a magnet disposed on the back surface of the substrate. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to held the substrate fixedly on the frame of Tsuchiya using a magnetic force, as opposed to a substrate clamp, so as not to use a substrate clamp with a reasonable expectation of success because Tsuchiya would have presented a recognition of equivalency in the prior art and would have presented strong evidence of obviousness in substituting one method for the other when fixedly holding a substrate against a mask.

With the substitution of spot welding for laser welding and of a substrate clamp for a magnet, only the flat frame and the flat cover mask would touch the flat mask.

*Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuchiya '988 and Ito '067 as applied to claim 18 above, and further in view of Kitazume '406.*

Tsuchiya and Ito are discussed above, but do not explicitly teach that the welding pitch between the dot welds is 3 mm or less. However, Kitazume teaches that spot welding is a suitable method for joining the pieces of a shadow mask used for vapor deposition to form organic EL devices [0004],[0010], wherein the welding pitch may be 1 mm [0035]. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have spot welded the mask of Tsuchiya with a welding pitch of 1 mm with a reasonable expectation of success because Kitazume teaches that such welding pitches are operable in the art. The selection of something based on its known suitability for its intended use has been held to support a prima facie case of obviousness. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945).

#### **(10) Response to Argument**

##### **Rejection 1**

*Claims 14-19 and 21-22 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement.*

Regarding the rejection of claim 14 and the claims depending therefrom, the rejection has been withdrawn, as indicated in the Advisory Action filed 6/1/2007.

Regarding the rejection of claim 22, Appellant argues the following on pg. 11 of the Brief:

[O]ne of ordinary skill in the art at the time the present applicant was filed would have understood that when the mask 110, the frame 120, and the cover mask 130 shown in Fig. 3 are joined together using laser dot welding as described in paragraph [0045], the heat of the laser melts the mask 110, the frame 120, and the cover mask 130 together in the welding dots 140, such that the frame 120 and the cover mask 130 are the only elements that touch the mask 110.

While this argument is true, the reversal of this analogy is not. Specifically, the requirement that "the flat frame and the flat cover mask are the only elements that touch the flat mask", as required in claim 22, is not necessarily limited to laser welding. For example, a clamp can hold the frame assembly together without touching the flat mask. The disclosure of a single species (i.e., laser welding) does not reasonably convey to one skilled in the art that Appellant had possession of an entire genus at the time the present application was filed because a genus contains multiple species. For the Appellant to have had possession of the invention of claim 22, the specification at the very least would have had to *include* the embodiment of clamping the frame assembly with a clamp without touching the flat mask and to *exclude* the use of traditional welding methods wherein a welding material (i.e., a material functioning as a glue) contacts the pieces to be held together (i.e., including the flat mask), neither of which is disclosed in the present specification. In fact, the present specification actually *includes* traditional welding techniques (see, e.g., claim 17) in which a welding material would contact the mask. Therefore, Appellant has not conveyed with reasonable clarity to those skilled in the art that he or she was in possession of claim 22 at the time the present specification was filed, and thus claim 22 does not comply with the written description requirement of 35 USC 112, 1st paragraph.

### **Rejection 2**

*Claims 14-17 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Utsugi '674 in view of Ito '067 and Martin '193.*

In order to maintain clarity of the rejection and arguments, a listing of the corresponding components from the claim and from Martin is provided as follows:

- The claimed mask corresponds to the metal foil 40' of Martin.
- The claimed frame corresponds to the mask supporting frame 34 of Martin. The supporting frame includes a flange 36 and a raised ridge 38.
- The claimed cover mask corresponds to the clamping member 88 of Martin. The clamping member includes a clamping member counterbore 94 and a raised boss member 98.

### **Claim 14**

Appellant argues on pg. 14 of the Brief that it is not clear as to what "2144.II.A." had meant in the Advisory Action of 6/1/2007. Examiner had in fact meant to make a reference to MPEP 2144.04.II.A., as assumed by Appellant.

At pg. 14 of the Brief, Appellant argues that it is not seen where anything whatsoever in Martin or elsewhere in the prior art discloses or suggests that features of the embodiment of Figs. 1-6 can be used in Fig. 7 as proposed in the rejection. However, modification of one embodiment with the other is obvious for the reasons set forth in the rejection and the Advisory Action filed 6/1/2007.

Additionally, Examiner would like to stress that the only difference between Fig. 7 of Martin and the mask assembly of independent claim 14 is that the frame, cover frame, and mask of Fig. 7 are not flat. It should be noted that claim 14 does not require any sort of fixation means, such as welding. A raised boss member 98 of the clamping member 88 (i.e., the claimed cover mask) defines a clamping member counterbore 94 and causes the metal foil 40' (i.e., the claimed mask) to lie in two separate planes (col. 10, lines 47-50). Similarly, a flange 36 terminates in a raised ridge 38 on the mask supporting frame 34 that causes the metal foil to lie in two separate planes (col. 7, lines 56-68). The structure of the clamping member and mask supporting frame allow the metal foil to be clamped and held in place (col. 11, lines 5-13), which prevents the metal foil from shifting. The mask assembly of Fig. 7 is actually advantageous over the invention of claim 14 because nothing is holding the mask of claim 14 in place. One of ordinary skill in the art would have recognized that the removal of the raised boss member and the raised ridge would have resulted in the subsequent loss of the fixation function. The removal of the raised boss member and the raised ridge would have been an obvious modification even if the metal foil may shift around more without the clamping function.

In the teaching of the embodiment of Fig. 7, Martin explicitly teaches that of importance is that a radial tension can be applied in a number of ways to the metal foil (col. 9, line 65-col. 10, line 2). Thus, Martin suggests that other methods of applying radial tension can be used so long as a tension is applied to the metal foil. In the case of removing the raised boss member and the raised ridge such that the clamping function would be lost, the weight of the clamping

member, even without adding the modification of welding, would necessarily provide at least some downward force on the metal foil such that at least some radial tension would be applied to the metal foil. Thus, the basic principle of Martin is maintained in the removal of such elements.

At pg. 16 of the Brief, Appellant argues the following:

[I]t appears that the examiner has proposed that the embodiment in Fig. 7 of Martin be modified as follows. Take the clamping member 88 (corresponding to the cover mask in claim 14) and grind off the raised boss member 98 so that the clamping member 88 has a flat surface.

Neither Examiner nor the disclosure of Martin has ever made any mention of a need to “grind off” any part of the mask assembly of Fig. 7. Appellant appears to be making a very literal interpretation of what is required of the modification of Fig. 7 in order to obtain the structure as claimed. Instead of literally removing the raised boss member by some physical means, the clamping member of Fig. 7 can simply be manufactured without a raised boss member. Similarly, the mask supporting frame can be manufactured without a raised ridge. There is simply no need to manufacture a part of the clamping member or the mask supporting frame that will later be removed.

At pg. 19 of the Brief, Appellant argues the following:

[I]t is furthermore submitted that the modification of the embodiment in Fig. 7 of Martin proposed by the Examiner would change the principle of operation of the embodiment in Fig. 7 of Martin, which is to stretch the metal foil 40' to establish a radial tension in the metal foil 40' by the clamping action of the clamping member 88 having the raised boss member 98 and the mask supporting frame 34 having the raised ridge 38.

The purpose of the raised boss member and the raised ridge is to provide a radial tension of the metal foil (i.e., the mask) by the clamping action. However, Martin is more concerned with applying substantially uniform tension of the metal foil than he is concerned with providing a clamping action (abstract). In the teaching of the embodiment of Fig. 7, Martin explicitly teaches that of importance is that a radial tension can be applied in a number of ways to the metal foil (col. 9, line 65-col. 10, line 2). Thus, Martin suggests that other methods of applying radial tension can be used so long as a tension is applied to the metal foil. In the case of removing the



raised boss member and the raised ridge such that the clamping function would be lost, the weight of the clamping member, even without adding the modification of welding, would necessarily provide at least some downward force on the metal foil such that at least some radial tension would be applied to the metal foil. Thus, the basic principle of Martin is maintained in the removal of such elements.

Claim 17

At pg. 21-22 of the Brief, Appellant argues the following:

Martin discloses two alternatives—using welding or using the clamping member 88. Martin teaches that if welding is used, then clamping member 88 is not used. Alternatively, Martin teaches that if the clamping member 88 is used, then welding is not used. It is in this sense that Martin specifically teaches away from using welding if the clamping member 88 is used. Thus, contrary to the Examiner's assertion that "[t]he alternative of clamping does not exclude welding," Martin specifically teaches that the alternative of clamping does in fact exclude welding.

However, the mere fact that Martin does not include a clamping member 88 if welding is used, and vice versa, does not rise to a level of teaching away because Martin never explicitly excludes the combination of both embodiments nor does he explicitly teach that the combination of both embodiments would render the invention inoperable. Appellant has not cited any statute, rule, procedure, or decision in support of his position.

At pg. 23 of the Brief, Appellant argues the following:

Furthermore, assuming *arguendo* that "Martin . . . never teaches away from using such methods [the clamping method and the welding method] in the same embodiment" as alleged by the Examiner, it is submitted that Martin also never teaches towards using both methods in the same embodiment. In the absence of such a teaching, it is submitted that the Examiner is required to identify some suggestion or motivation . . . to combine the welding method of the welding embodiment in FIGS. 1-6 of Martin with the clamping member 88 of the clamping embodiment in FIG. 7 of Martin.

However, the rejection above provides motivation to combine two embodiments of Martin. In particular, one of ordinary skill in the art would have realized that the elimination of the raised boss member and raised ridge would result in the loss of the fixation means in the

metal foil assembly of Fig. 7. Martin teaches in a different embodiment that welding can be used to join different parts of the mask assembly and that welding can be used as a means for affixing the metal foil (col. 8, lines 63-68; col. 10, lines 22-32). In view of this teaching, one of ordinary skill in the art would have recognized 1) that the step of welding would supplement for the loss of the function of the raised boss member and the raised ridge and 2) that the addition of a welding step would be able to provide a greater amount of radial tension in the metal foil as compared to the amount of radial tension that can be provided with just the weight of the clamping member. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have omitted the raised boss member and the raised ridge (i.e., such that the metal foil would have a flat surface extending over an entire area of the metal foil) and to have welded the mask assembly of Fig. 7 together with a reasonable expectation of success because one of ordinary skill in the art would have realized that the elimination of such elements would have a subsequent loss of its function and because Martin teaches that welding is an operable method of joining parts of the mask assembly and an operable means for affixing the mask with the desired tension.

#### Claim 21

Appellant argues on pg. 26 of the Brief that Martin's teaching of "substantially uniform tension" of the mask is entirely too generalized to suggest the feature of claim 21 that recites a very specific combination of (1) "different tensions" (2) "at different points" (3) "on each of a plurality of sides of the flat mask". However, Martin's teaching of "substantially uniform tension" would reasonably suggest that the mask is not completely uniform. This slight non-uniformity would necessarily cause different tensions at different points of the mask. Where the Patent Office has reason to believe that a functional limitation asserted to be critical for establishing novelty in the claimed subject matter may, in fact, be an inherent characteristic of the prior art, it possesses the authority to require applicant to prove that the subject matter shown to be in the prior art does not possess the characteristic relied upon. *In re Swinehart*, 439 F.2d 210, 169 USPQ 226 (CCPA 1971).

The claim is not specific as to a numerical value of the different tensions, and thus the mere teaching that the mask has "substantially uniform tension" is sufficient to meet the limitations of "different tensions at different points on each of a plurality of sides of the flat mask".

### **Rejection 3**

*Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Utsugi '674 in view of Ito '067 and Martin '193 as applied to claim 14 above, and further in view of Yamada '807.*

Appellant argues on pg. 26 of the Brief that claim 15 is allowable because it depends from claim 14. However, the rejection of claim 14, as well as the rejection for claim 15, should be affirmed for the reasons discussed above.

### **Rejection 4**

*Claims 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Utsugi '674 in view of Ito '067 and Martin '193 as applied to claim 17 above, and further in view of Kitazume '406.*

Appellant argues on pg. 27 of the Brief that the combination of references do not disclose or suggest "wherein the welds are dot welds" of claim 18 or the feature "wherein a welding pitch between the dot welds is 3 mm or less" of claim 19 because it would not have been obvious to use welding in the modification of the embodiment of Fig. 7 of Martin. However, Examiner maintains his position that it would have been obvious to combine the embodiment of Figs. 1-6 and the embodiment of Fig. 7 of Martin for the reasons discussed above. Thus, the rejection of claims 18-19 should be affirmed because Kitazume teaches that such modifications would have been obvious.

### **Rejection 5**

*Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Utsugi '674 in view of Ito '067 and Martin '193 as applied to claim 14 above, and further in view of Fujimori '754.*

Appellant cites MPEP 2144.06 on pg. 29 of the Brief and argues the following:

[T]he Examiner has not identified anything whatsoever in Martin and Fujimori or elsewhere in the prior art that recognizes that Martin's alignment method and Fujimori's alignment method are equivalents. Rather, the rejection appears to be based solely on the Examiner's opinion that these two alignment methods are functional or mechanical equivalents.

Appellant seems to be presenting the argument based on the passage of MPEP 2144.06 that states "equivalency must be recognized in the prior art, and cannot be based on . . . the mere fact that the components at issue are functional equivalents", as cited on pg. 29 of the Brief. However, MPEP 2144.06 also states that "there was evidence that both phthalocyanine and selenium were known photoconductors in the art of electrophotography. 'This, in our view, presents strong evidence of obviousness in substituting one for the other in an electrophotographic environment as a photoconductor.' 209 USPQ at 759.) ." The mere knowledge that the two compounds were known to be operable and/or functional equivalents was sufficient evidence of obviousness in substituting one for the other.

Accordingly, Martin recognizes that the use of the registration pins 62 and adjusting means 64 is an operable method of aligning a mask to a substrate (col. 9, lines 30-36 and col. 18, line 54-col. 19, line 34; Figs. 1 and 21-23) for a vapor deposition process (col. 1, lines 13-21 and col. 2, lines 54-59), and Fujimori recognizes that a camera and alignment marks 6 on the mask assembly 1 can be used to align a mask to a substrate [0066] for a vapor deposition process [0067]. The alignment marks of Fujimori do not contact a mask 20. With these two teachings, one of ordinary skill in the art at the time that the present application was filed would have acknowledged that the alignment method of Martin and the alignment method of Fujimori were operable equivalents. The teachings of Martin and Fujimori would have presented a recognition of equivalency in the prior art and would have presented strong evidence of obviousness in substituting one method for the other in a process of aligning a mask to a substrate.

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

This examiner's answer contains a new ground of rejection set forth in section (9) above. Accordingly, appellant must within **TWO MONTHS** from the date of this answer exercise one of the following two options to avoid *sua sponte* **dismissal of the appeal** as to the claims subject to the new ground of rejection:

(1) **Reopen prosecution.** Request that prosecution be reopened before the primary examiner by filing a reply under 37 CFR 1.111 with or without amendment, affidavit or other evidence. Any amendment, affidavit or other evidence must be relevant to the new grounds of rejection. A request that complies with 37 CFR 41.39(b)(1) will be entered and considered. Any request that prosecution be reopened will be treated as a request to withdraw the appeal.

(2) **Maintain appeal.** Request that the appeal be maintained by filing a reply brief as set forth in 37 CFR 41.41. Such a reply brief must address each new ground of rejection as set forth in 37 CFR 41.37(c)(1)(vii) and should be in compliance with the other requirements of 37 CFR 41.37(c). If a reply brief filed pursuant to 37 CFR 41.39(b)(2) is accompanied by any amendment, affidavit or other evidence, it shall be treated as a request that prosecution be reopened before the primary examiner under 37 CFR 41.39(b)(1).

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Extensions of time under 37 CFR 1.136(a) are not applicable to the TWO MONTH time period set forth above. See 37 CFR 1.136(b) for extensions of time to reply for patent applications and 37 CFR 1.550(c) for extensions of time to reply for ex parte reexamination proceedings.

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Respectfully submitted,

Jimmy Lin



A Technology Center Director or designee must personally approve the new  
ground(s) of rejection set forth in section (9) above by signing below:

Greg Mills



GREGORY MILLS  
QUALITY ASSURANCE SPECIALIST


Conferees:

Jennifer Michener



JENNIFER MICHENER  
QUALITY ASSURANCE SPECIALIST

Tim Meeks



TIMOTHY MEES  
SUPERVISORY PATENT EXAMINER